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Onoclea sensibilis L., *Onoclea Struthiopteris* (L.) Hoffm., *Botrychium lanceolatum angustisegmentum* Pease & Moore, *Botrychium ramosum* (Roth) Aschers., *Botrychium ternatum intermedium* D. C. Eaton, *Botrychium ternatum rutaefolium* (A. Br.) D. C. Eaton, *Botrychium virginianum* (L.) Sw.

BOGS AND MARSHES: *Phegopteris polypodioides* Fée., *Phegopteris dryopteris* (L.) Fée, *Aspidium Thelypteris* (L.) Sw., *Aspidium noveboracense* (L.) Sw., *Aspidium cristatum* (L.) Sw., *Cystopteris bulbifera* (L.) Bernh., *Onoclea sensibilis* L., *Osmunda regalis* L., *Osmunda Claytoniana* L., *Osmunda cinnamomea* L., *Ophioglossum vulgatum* L., *Botrychium virginianum* (L.) Sw.

DEPARTMENT OF BOTANY,
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Standley's Ferns of Greene Co., Mo.

BENJAMIN FRANKLIN BUSH

I have recently read the interesting paper on the Ferns of Greene County, Missouri, by Mr. Standley, in the AMERICAN FERN JOURNAL for April-June, 1916, and I think a few remarks on the introduction and the notes under several species will be very appropriate here.

In the introduction Mr. Standley gave a short account of the topography, the characteristic rocks and soil, and the names of a few characteristic and extra-limital plants.

It was my good fortune many years ago to have been able to collect in Greene County, Missouri, in company with Mr. Blankinship and Prof. Shepard, and it was on one of my trips there with the former, that the last species mentioned by Mr. Standley, *Othake callosum*, was discovered in Greene County, though at that time I little dreamed that this interesting composite would be later on associated with my name.

To the list of characteristic and extra-limital species given by Mr. Standley for Greene County, I can add *Xyris flexuosa* and *Scleria Torreyana* from about Goose Pond, *Actaea alba* from the James River, *Phacelia dubia* and *P. hirsuta* from Pearl and Willard, *Heliotropium tenellum* and *Portulaca pilosa* from Willard, and *Brauneria paradoxa* from the prairie between Nichols Junction and Springfield.

But it appears to me that Mr. Standley is in error in citing *Micranthes Virginiensis* and *Bumelia lycioides* for Greene County, Missouri. The first was collected by Blankinship between Willard and Graydon Springs, May 7, 1905, No. 1, and named by him *Saxifraga Virginiensis*, but in a short paper on the Missouri Saxifrages in the Annual Report of the Missouri Botanical Garden for the year 1910, I was able to show that the Greene County species was *Micranthes Texana*, a species of the Southwest which extends northeast into southwestern Missouri.¹

The *Bumelia* given by Mr. Standley must certainly be *B. lanuginosa*, a common tree in some parts of Greene County and all southern Missouri, and not *B. lycioides*, which is a species of swamps of southeastern Missouri to Louisiana, Virginia, Florida and Texas.

In his notes under *Notholaena dealbata*, Mr. Standley says: "This is a Southwestern species which reaches the northeastern limit of its range in Southern Missouri," a statement which could only have been based on what the Manuals say, and not on actual specimens and local lists,² for this species ranges much farther north and east. It is rather common on bare faces of limestone

¹ It is interesting to note that Dr. Small in the second edition of his Flora, gives only Texas and Arkansas for *Micranthes Texana*, evidently overlooking my paper on the Missouri Saxifrages cited above.

² In a letter dated August 12, 1916, Mr. Standley says that there is no material of this species in the National Herbarium from beyond Greene County.

boulders in Jackson County, and I have seen specimens of it from Holt and Platte Counties, nearly 100 miles farther north, Greene has collected it in northwestern Missouri, Tracy in his Flora in 1886, gives it for Boone County, Daniels in his Flora in 1907, gives it for Columbia, it has even been reported from western Illinois near St. Louis, and I have a letter from Dr. Engelmann in which he says it is occasionally found about St. Louis.

On a collecting trip with Prof. Shepard in 1885, I saw *Adiantum Capillus-Veneris* along the James River just east of Gates, and farther down the river in Christian County, and Shepard reports it from Greene, Christian and Stone Counties in Tracy's Flora in 1886.

In his note on the range of *Asplenium Bradleyi*, Mr. Standley says "'On rocks e. N. Y. to Ky., 'Mo.,' and southw.'³ There is no longer reason to question its occurrence in Missouri, for the specimen from Greene County is undoubtedly this species." There has been no doubt about the occurrence of this species in Missouri with collectors for 25 years or more, it having been collected at Osceola by Van Ingen and Shepard in 1890, by Mackenzie at Bay Mills in 1897, by Russell at Mine La Motte in 1897, at Rolla by Greene in 1915, and at Montevallo by Bush and Greene in 1915.

Mr. Standley very properly eliminates *Asplenium pinatifidum* from the Greene County flora, as the Greene County citation of Shepard's in Tracy's Flora, was a mistake of Tracy's, Shepard reporting this to me for Missouri, not Greene County, his knowledge of it based on some collection as yet unknown to me. Davenport in his catalogue in 1879 credits this species to Missouri, having specimens in his herbarium collected by some early collector, perhaps by Shepard. Davenport appears to have been followed by Gray, Britton and Brown, Gilbert and Maxon in citing this species for Missouri.

³ The range in Gray's New Manual, seventh edition, 1908.

I have seen specimens of this species collected by Russell at Mine La Môtte, November 10, 1898.

In his remarks on *Equisetum hyemale*, Mr. Standley says: "Only this one species of *Equisetum* is known to occur in the County," but in a list of Greene County plants prepared for me many years ago, Prof. Shepard gives two species, *E. hyemale* and *E. sylvaticum*! I am referring the last to *E. arvense*, as it is not likely that *E. sylvaticum* occurs in Greene County, and it seems almost impossible that *E. arvense* should be absent from the Greene County flora.

At the time Prof. Shepard collected *Equisetum* specimens, it was not known that the common evergreen species of Missouri and all the northern and eastern United States, was *E. laevigatum*, Braun's species being long misunderstood, and confused with a then unnamed annual-stemmed species of the western and southern United States, which was taken up as *E. laevigatum*, and Braun's species given a new name by Eaton, *E. hyemale intermedium*. I am therefore referring Shepard's *E. hyemale*, and the *E. hyemale* of Mr. Standley's list, to *E. laevigatum*, as it is more likely to be that, than the true *E. hyemale*, which is now generally conceded not to occur in North America.⁴

That a better understanding of the three species involved in this obscurity may be had, I append the following somewhat descriptive key:

⁴ In a letter from Mr. Standley, dated Aug. 10, 1916, received since the above was written, he says: "The *Equisetum* material which I collected in Greene County I have re-examined with Dr. Maxon, and there is no doubt that it is *E. hyemale intermedium* A. A. Eaton. The cross-section of the stem is very unlike that of *E. laevigatum*, as shown well in the figure accompanying Mr. Eaton's treatment of the genus in Gray's New Manual." But Mr. Eaton's *E. hyemale intermedium* is exactly *E. laevigatum* A. Braun, as shown by one of his co-types in the Herbarium of the Missouri Botanical Garden, and Eaton's *E. laevigatum* was an unnamed, annual-stemmed species.

A. Aerial stems evergreen, sometimes freezing down to the ground in severe winters, rough to a greater or less degree; cones tipped with a rigid point.

B. Stems bright green; sheaths cylindrical, not dilated upward, usually with two black bands, sometimes entirely black; stems rough, tuberculate; not American.

1. *EQUISETUM HYEMALE* L.⁵

B. Stems yellowish green; sheaths elongated, dilated upward, with a narrow black band at the top and frequently with a second irregular one below; stems smoothish, only slightly tuberculate; widely distributed in America.

2. *EQUISETUM LAEVIGATUM* A. Br.⁶

A. Aerial stems annual, smooth; cones without a point; stems usually unbranched, except when broken; sheaths elongated, dilated upward, with a narrow black band at the top, rarely with a faint second one below; western and southern United States.

3. *EQUISETUM KANSANUM* Schaffner⁷

COURTNEY, Mo.,

A New Station for Scott's Spleenwort

CLARA G. MARK

While on a fern-collecting trip in the southern part of Hocking County, Ohio, last July, the writer found a single plant of Scott's Spleenwort, *Asplenium ebenoides*, growing on the face of a ledge of sandstone. This county is an interesting one botanically and has been for years a favorite collecting ground for the botanists of central Ohio. Twenty-two years ago Dr. W. A. Kellerman collected a plant of this species from a sand-

⁵ *EQUISETUM HYEMALE* L, Sp, Pl, 1062. 1753.

⁶ *EQUISETUM LAEVIGATUM* A, Braun: Engelm, Am, Journ, Sci, 46: 87, 1844.

Equisetum hyemale Am. Auct. in large part, not L. 1753.

Equisetum hyemale intermedium A. A. Eaton, Fern Bull. 10: 121. 1902 in part.

⁷ *EQUISETUM KANSANUM* Schaffner, Contr. Bot. Lab. Ohio State Univ, No. 70. Nov. 1912.

Equisetum laevigatum A. A. Eaton and Am. Auct. in part, not A, Braun, 1844.